

## **IN THE SPECIFICATION**

Please insert the following on page 1, line 5:

### **--CROSS-REFERENCE TO RELATED APPLICATION**

This application is a Divisional Application of Application No.10/336,520, filed on January 3, 2003.--

Please rewrite the paragraph on page 7, lines 26-27, as follows:

Thus, the larger the normalized coupling ~~effect~~ coefficient  $\kappa L$ , the better the transmission characteristics.

Please rewrite the paragraph beginning on page 10, line 22, and ending on page 11, line 5, as follows:

In one sample of the phase-shifted DFB-LD of Fig. 6, if the etching depth of the diffraction grating 12 is  $0.013\mu\text{m}$ , the coupling coefficient  $\kappa$  is about  $65\text{cm}^{-1}$ . In this case, if the cavity length  $L$  is  $450\mu\text{m}$ , the normalized coupling coefficient  $\kappa L$  is 2.92. On the other hand, the gain peak wavelength  $\lambda_g$  of the MQW active layer 14 is made  $1.58\mu\text{m}$ , for example. In this case, if the period of the diffraction grating 12 is  $240.0\text{nm}$ , the oscillation wavelength  $\lambda$  is  $1.55\mu\text{m}$ . Thus, the detuning amount  $\Delta\lambda$  is  $0.03\mu\text{m}$ . In this state where  $(\Delta\lambda, \kappa L) = (0.03\mu\text{m}, 2.92)$ , when this sample was directly-modulated at  $2.5\text{ Gb/s}$  and was subject to a  $100\text{km}$  transmission, the power penalty thereof was smaller than  $1\text{dB}$ . Other samples each having a value of  $\kappa L$  from 1.8 to 3.0 and a value of  $\Delta\lambda$  from  $5$  to  $50\text{nm}$  was directly-modulated at  ~~$2.5\text{ Gb/s}$~~   $2.5\text{ Gb/s}$  and was subject to a  $100\text{km}$  transmission, the power penalties are shown in Fig. 7. As a result,  $A = 0.05\text{nm}^{-1}$  and  $B = \del{3.0} \underline{3.8}$ .

Please rewrite the paragraph on page 12, lines 21-25, as follows:

A fourth example is applied to a phase-shifted DFB-LD which is the same as the third example of phase-shifted DFB-LD except that the ~~InGaAsP~~ A1GaInAs MQW active layer 34 is modified to have a tensile strain of 1.0% or more. In this case, as shown in Fig. 11,  $A = 0.05\text{nm}^{-1}$  and  $B = 3.0$ .